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Kurt Bollacker

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EXAMINER

HOLMES, MICHAEL B

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/647,949	<b>Applicant(s)</b> BOLLACKER ET AL.	
	<b>Examiner</b> Michael B. Holmes	<b>Art Unit</b> 2129	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 2, 10, 11, 17, 24, 28, 29 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |



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### Examiner's Detailed Office Action

1. This Office Action is responsive to communication received on 11/27/2007.
2. Amendment under 37 CFR § 1.111 reconsideration and allowance of application is respectfully requested by applicant.
3. Applicant's arguments have been fully considered, however, they are not persuasive.
4. The rejection under 35 USC § 101, 35 USC § 112 1<sup>st</sup>, 35 USC § 102 (b) & 35 USC § 103 (a) stands, the complete Office Action mailed (08/30/2007) has been included below.

### Examiner's Detailed Office Action

1. This Office Action is responsive to the request for continued examination (filed June 5, 2007) of the communication for application 10/647,949, filed February 5, 2007.
2. Claims 1-9, 12-16, 18-23, 25-27, and 30-34 are pending. Claims 1, 9, 16, 18-23, 25, 26, and 30-32 are currently amended. Claims 10, 11, 17, 24, 28, and 29 are cancelled. Claims 13, 14, 33, and 34 are previously presented. Claims 2-8, 12, and 27 are original.
3. After the previous office action, claims 1-10, 12-16, 18-27, and 29-34 stood rejected.

## Claim Objections

4. Claim 30 is objected to because of the following informalities: “A stored executable instructions that can be executed by an associated processor to edit and display for editing and displaying” should be -- A set of stored executable instructions that can be executed by an associated processor to edit and display -- or -- A set of stored executable instructions that can be executed by an associated processor for editing and displaying --.

Appropriate correction is required.

## ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-9, 12-15, 26-27, and 31-34 are rejected under 35 U.S.C. 101 because the claimed invention is preemptive. Independent claims 1, 26, and 31 recite a system for “editing and displaying a structured argument, having a plurality of associated parameters”. Examiner interprets a “structured argument” to be any “argument”, or coherent series of statements leading from a premise to a conclusion, having a logical, grammatical, semantic, linguistic, phonemic, and graphemic structure. Examiner interprets “associated parameters” to mean any of a set of physical properties whose values determine the characteristics or behavior of something referred

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to in the structured argument. Thus, independent claims 1, 26, and 31 seek patent protection for a computer system for “editing and displaying” any conceivable coherent series of statements leading from a premise to a conclusion, having a logical, grammatical, semantic, linguistic, phonemic, and graphemic structure. Independent claims 1, 26, and 31 clearly preempt the application of editing and displaying arguments in any conceivable language or representation of language (i.e. sentential calculi) for any conceivable subject displayed or edited in any conceivable way by a computer system. Claims 2-9, 13-15, 27, and 32-34 fail to remedy the deficiency of independent claims 1, 26, and 31 as they provide only limitations descriptive of the operations of the underlying algorithm that is the actual invention. Since claims 2-9, 13-15, 27, and 32-34 fail to remedy the deficiency of independent claims 1, 26, and 31, claims 1-9, 12-15, 26-27, and 31-34 are considered non-statutory under 35 U.S.C. 101.

7. Claim 30 is rejected under 35 U.S.C. 101 because the claimed invention is preemptive.

Independent claim 30 recites “stored executable instructions that can be executed by an associated processor to edit and display a structured argument”. Examiner asserts that claim 30 is preemptive in the same way as are independent claims 1, 26, and 31 where it seeks patent protection for executable code to edit and display any conceivable coherent series of statements leading from a premise to a conclusion, having a logical, grammatical, semantic, linguistic, phonemic, and graphemic structure. Claim 30 is therefore considered to be non-statutory under 35 U.S.C. 101.

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8. Claims 1-9, 12-15, 26-27, and 31-34 rejected under 35 U.S.C. 101 because the claimed invention lacks utility. Independent claims 1, 26, and 31 recite a system for “editing and displaying a structured argument, having a plurality of associated parameters” however no real world application of the algorithm underlying these capabilities is ever disclosed. Applicants disclose in the Specification that:

[0025] It will be appreciated that the present invention can be employed in any applications requiring structured reasoning. The systems and methods of the present invention can be applied to applications ranging from high-level government policy to procurement decisions in a small business. Thus, while the exemplary embodiments illustrated within this application focus on military and defense application, the present invention can be applied in other fields, such as industrial processes, design work, research, and corporate management.

However, the embodiments disclosed by Applicants:

[0028] In an exemplary embodiment, the argument model can represent a belief network, such as a Bayesian belief network, a Dempster-Shaffer belief network, a neural network, or the like. Accordingly, the graphic user interface can display the argument model in a like fashion as a plurality of nodes. Each node represents a hypothesis from the structured argument.

[0039] In the illustrated implementation, an argument model 52 is saved as a XML (Extensible Markup Language) schema. The XML argument model can be a subargument associated with a main argument model. The XML argument model is provided to an XML parser 54 that extracts the argument data from the XML file. The extracted data is then provided to an editor engine 56 that processes the data and incorporates it into the main argument model. In an exemplary embodiment, a node representing the contributing hypothesis of interest can already be present in the main argument model.

are abstract mathematical or data transformative applications, referring to no substantial or specific problem in a real world problem domain.

Examiner notes that Applicants assert “the present invention can be *applied* to applications ranging from high-level government policy to procurement decisions in a small business”

[emphasis added]. Taking “applied” to mean useful and the assertion to be true, Examiner is left with the problem of determining in what specific and substantial areas of government policy and small business procurement the invention is useful, as well as how it is useful (see enablement rejections below). Indeed, while a “focus on military and defense application” was alluded to, none can be found. Further, Applicants describe their invention as:

[0024]...a scalable graphic display illustrating a structured argument as a conclusion and one or more supporting and detracting hypotheses. The argument can be edited by a user with real time updates to the structure of the argument model and the associated probability values of the conclusion and the various hypotheses. This allows a user to immediately see the impact of any change of reasoning.

where

[0026]... Structured arguments can comprise hundreds or even thousands of hypotheses.

and

[0029] Each hypothesis within the structured argument is associated with one or more parameters. For example...an associated confidence value reflecting a likelihood that the hypothesis is true. Similarly, the logical relationships between the hypotheses, as represented by the connectors, can have associated parameters, referred to as influence values. In an exemplary embodiment, the confidence value of each hypothesis, including the main hypothesis, is a function of the confidence values of its associated parent nodes and the influence values associated with their respective logical connections to the child node.

Examiner finds no reason to believe a representation of government policy, small business procurement, tactical situations, or war strategy as “a conclusion and one or more supporting and detracting hypotheses” where there are “hundreds or even thousands of hypotheses” and each “hypothesis within the structured argument is associated with one or more parameters” would be useful to practitioners of ordinary skill in the arts of government policy, small business procurement, or military tactics and strategy in the execution of particular job tasks within these domains (under time pressure). The critical utility problem with Applicants’ invention and other

probabilistic modeling approaches is the requirement to accumulate potentially exponential numbers of prior probabilities (*see* Russell et al., “Artificial Intelligence A Modern Approach”, p. 477, §13.4, final para.). Therefore, claims 1, 26, and 31 are rejected under 35 U.S.C. 101 as lacking utility.

Claims 2-9, 13-15, 27, and 32-34 fail to remedy the deficiency of independent claims 1, 26, and 31 as they provide only limitations descriptive of the operations of the underlying algorithm that is the actual invention. Since claims 2-9, 13-15, 27, and 32-34 fail to remedy the deficiency of independent claims 1, 26, and 31, claims 1-9, 12-15, 26-27, and 31-34 are considered non-statutory under 35 U.S.C. 101.

9. Claim 30 is rejected under 35 U.S.C. 101 because the claimed invention lacks utility in the same way that claims 1, 26, and 31, lack utility. Claim 30 is therefore considered to be non-statutory under 35 U.S.C. 101.

10. Claims 16, 18-23, and 25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory material: mathematical abstraction. Independent claim 16 recites a “computer readable medium having stored executable instructions for determining the sensitivity of a hypothesis of interest to a parameter within an argument model”. Clearly, Applicant’s invention is not simply a “computer readable medium having stored executable instructions”, but “stored executable instructions for determining the sensitivity of a hypothesis of interest to a parameter within an argument model”. However, the result of the execution of said “stored executable instructions” is a mathematical abstraction, unlike, for example: the sensitivity of a final share price to trade volume or the sensitivity of blood sugar level to measured alcohol consumption. Claims 18-23 and 25 merely provide limitations on the operation of the code and



do not cure the deficiency of claim 16. Therefore claims 16, 18-23, and 25 are considered non-statutory under 35 U.S.C. 101.

11. Claims 16, 18-23, and 25 are rejected under 35 U.S.C. 101 because the claimed invention is preemptive. Independent claim 16 recites a “computer readable medium having stored executable instructions for determining the sensitivity of a hypothesis of interest to a parameter within an argument model”. Examiner interprets a “structured argument” to be any “argument”, or coherent series of statements leading from a premise to a conclusion, having a logical, grammatical, semantic, linguistic, phonemic, and graphemic structure. Examiner interprets “associated parameters” to mean any of a set of physical properties whose values determine the characteristics or behavior of something referred to in the structured argument. Thus, independent claim 16 seek patent protection for software “for determining the sensitivity of a hypothesis of interest to a parameter within an argument model” described in any conceivable coherent series of statements leading from a premise to a conclusion, having a logical, grammatical, semantic, linguistic, phonemic, and graphemic structure. Independent claims 16 clearly preempts the application of well known mathematical approaches to “determining the sensitivity of a hypothesis of interest to a parameter within an argument model” in any conceivable language or representation of language (i.e. sentential calculi) for any conceivable subject in any conceivable way by executable code. Claims 18-23 and 25 merely provide limitations on the operation of the code and do not cure the deficiency of claim 16. Therefore claims 16, 18-23, and 25 are considered non-statutory under 35 U.S.C. 101.

12. Claims 16, 18-23, and 25 are rejected under 35 U.S.C. 101 because the claimed invention lacks utility as it is directed to mathematical abstraction (*see above*). Claims 18-23 and 25 merely provide limitations on the operation of the code and do not cure the deficiency of claim 16. Therefore claims 16, 18-23, and 25 are considered non-statutory under 35 U.S.C. 101.

### Claim Rejections - 35 USC § 112, 1st

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 1-9, 12-15, 26-27, and 31-34 rejected under 35 U.S.C. 112, first paragraph, as Applicants have not disclosed how to use the invention due to the lack of a specific and substantial utility.

15. Claims 16, 18-23, and 25 rejected under 35 U.S.C. 112, first paragraph, as Applicants have not disclosed how to use the invention due to the lack of a specific and substantial utility.

16. Claim 30 is rejected under 35 U.S.C. 112, first paragraph, as Applicants have not disclosed how to use the invention due to the lack of a specific and substantial utility.

### ***Claim Rejections - 35 USC § 102***

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by *Chryssafidou*.

Regarding claim 26. *Chryssafidou* teaches a system (*see* Abstract) for editing and displaying a structured argument (*see* p. 10, Fig. 6), comprising a plurality of parameters (*see* p. 10, Fig. 6, *Examiner interprets: claim, argument, support, refute, conjunction, and opposed claims (show in the screen shot key) to be a plurality of associated parameters of a structured argument.*), comprising:

means for graphically displaying the plurality of parameters, each having an associated value (*see* p. 10, Fig. 6); the means for displaying comprising means for scaling a displayed argument model to a desired size (*see* p. 10, Fig. 6, *Examiner interprets the drop down menu, currently displaying 100%, to comprising means for scaling a displayed argument model to a desired size.*);

means for receiving input from a user, the input comprising a request to modify respective values of at least one selected parameter from the plurality of parameters (*see* p. 10, Fig. 6, “**Tools palette:** This is the main feature of the drawing area where the user designs the argumentation using text boxes, graphic arrows and links.”);

means for modifying the values of the at least one selected parameter and at least one other parameter from the plurality of parameters (*see* p. 10, Fig. 6, *Examiner asserts that Fig. 6 shows the palette of modifiable objects representing the parameters of the argument.*); and

means for altering at least one parameter of the structured argument according to a predetermined series of values as to represent changes in the at least one parameters over a period of time (*see* p. 10, “**Diagram:** This is the artefact produced from the process of argument formulation using the tools palette. It is actually a file on which the Tutor and the Student could

annotate their comments, establish hyperlinks with the essay, and mail it to each other in the context of the on-line tutorial.”, *Examiner interprets “in the context of the on-line tutorial” to comprise taking place over a period of time, thus the Diagram is the means for altering at least one parameter of the structured argument according to a series of values predetermined by the Tutor, for tutorial purposes, to represent changes in the at least one parameters.*); and

means for updating the modified parameter values at the means for displaying in real time in response to the user input (*see p. 10, Fig. 6, “Tools palette: ...” and “The system feedback: The system provides feedback on the structure of the arguments –not the content of them- only by request.”, Examiner asserts that the system places the feedback in the commenting area.*).

### ***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Chryssafidou* in view of *Toda et al.*, “An Argument-Based Agent System with KQML as an Agent Communication Language”, 2001.

Regarding claim 1. *Chryssafidou* teaches a system (*see* Abstract) for editing and displaying a structured argument (*see* p. 10, Fig. 6), having a plurality of associated parameters (*see* p. 10, Fig. 6, *Examiner interprets: claim, argument, support, refute, conjunction, and opposed claims (show in the screen shot key) to be a plurality of associated parameters of a structured argument.*), the system comprising:

a user interface that graphically displays the plurality of parameters at a user accessible display and receives input from a user defining the value of a selected parameter (*see* p. 10, Fig. 6);

a computational engine that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input (*see* Abstract, *Examiner interprets DIALECTIC to be the computational engine.*).

*Chryssafidou* does not teach

a processor operative to execute computer executable instructions; and

a computer readable medium that stores executable instructions, the executable instructions comprising:

a simulation function that alters at least one parameter of the structured argument according to a predetermined series of values, representing changes in the at least one parameter over a period of time.

However, *Toda et al.* does teach

a processor operative to execute computer executable instructions (*see* Fig. 5 and p. 55, “The system has been implemented in Java for the part of the communication control among agents, and in Prolog for the part of the construction of arguments and counterarguments. We have developed a subsystem for the argument-based agent system so that argument processes taken into account issue changes are visualized. In Figure 5, the lower right window displays two argument process trees...”, *Examiner asserts the inherency of a processor operative to execute computer executable instructions to generate “two argument process trees” as shown in Fig. 5 by a “system...implemented in Java for...the communication control among agents, and in Prolog for...the construction of arguments and counterarguments”.*); and

a computer readable medium that stores executable instructions (*see* above, *Examiner asserts the inherency of a memory (i.e., a computer readable medium that stores executable instructions) for a processor operative to execute computer executable instructions to generate “two argument process trees” as shown in Fig. 5 by a “system...implemented in Java for...the communication control among agents, and in Prolog for...the construction of arguments and counterarguments”.*), the executable instructions comprising:

a simulation function that alters at least one parameter of the structured argument according to a predetermined series of values, representing changes in the at least one parameter

over a period of time (*see pp. 55-56, “We have developed a subsystem for the argument-based agent system so that argument processes taken into account issue changes are visualized. In Figure 5, the lower right window displays two argument process trees in which the issue and its argument located in the top node of the left tree has changed into the right one, and the upper window displays an argument tree located in a node of argument process tree.”*, *Examiner interprets the “argument-based agent system” to be a simulation function and “argument processes ... issue changes ... visualized” to be at least one parameter of the structured argument according to a predetermined series of values, representing changes in the at least one parameter over a period of time.*). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Chryssafidou* and *Toda et al.* in order to obtain argumentation that is tolerant of inconsistencies in the world as well as in data and knowledge bases, in contrast to traditional logics.

21. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Chryssafidou* in view of *Murphy*.

Regarding claim 13. *Chryssafidou* teaches the system of claim 12. However, *Chryssafidou* does not teach the argument model being represented by a Bayesian belief network. *Murphy* teaches the argument model being represented by a Bayesian belief network (*see p. 2, §Representation, “Examiner interprets the random variables to be hypotheses.”*). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Chryssafidou* and *Murphy* in order to provide reasoning under uncertainty.

22. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Chryssafidou* in view of *Wang*.

Regarding claim 14, *Chryssafidou* teaches the system of claim 12. However, *Chryssafidou* does not teach the argument model being represented by a Dempster-Shafer belief network. *Wang*, however, does teach the argument model being represented by a Dempster-Shafer belief network (see p. 510, §2. BELFUN System Architecture and Knowledge Base Construction, “BELFUN incorporates the Dempster-Shafer theory of belief functions, belief propagation schemes...”). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Chryssafidou* and *Wang* in order to provide reasoning under uncertainty.

23. Claims 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over *HALLoGRAM* in view of *SYSTAT*.

Regarding claim 16, *HALLoGRAM* teaches a computer readable medium having stored executable instructions (see §PrecisionTree Features, *Examiner asserts the inherency of a computer readable medium having stored executable instructions to run a “True 32-bit application for Windows 95/NT”*.) for determining the sensitivity of a hypothesis of interest to a parameter within an argument model (see §Sensitivity Analysis, *Examiner interprets a decision to be a hypothesis*.), such that an associated processor executing the executable instructions performs a plurality of functions (see §PrecisionTree Features, *Examiner asserts the inherency of a processor executing executable instructions to perform a plurality of functions to run a “True 32-bit application for Windows 95/NT”*.) comprising:



providing a continuous mechanism for a user to modify the parameter, such that the user can make multiple modifications to the parameter in rapid sequence (*see* §Sensitivity Analysis, “PrecisionTree modifies the values of the sensitivity variables you specify and records the changes in the expected value of the tree.”),

altered to illustrate a change in the confidence value (*see* pp. 1-2, §Overview, “For example, before you decide where to have a picnic, you need to determine the chance that it will rain.) The result is a tree structure with the “root” on the left and branches for each chance event or decision extending to the right. Probabilities of events occurring and payoffs for events and decisions are added to each node in the tree.”, *Examiner interprets “that it will rain” to be the hypothesis, node color (see figure) to be a qualitative display, and “payoffs” to be a type of display of confidence value.*).

*HALLoGRAM* does not teach updating a confidence value associated with the hypothesis of interest in response to the modification of the parameter or altering a display of the confidence value of the hypothesis of interest in real time to match the updated confidence value in response to each modification of the parameter, wherein the display of the confidence value comprises a qualitative display of the confidence value, such that a non-numerical quality of a node associated with the hypothesis of interest is altered to illustrate a change in the confidence value. However, *SYSTAT* does teach updating a confidence value associated with the hypothesis of interest in response to the modification of the parameter (*see* §Data Management, “Spreadsheet-like data editing with optional graphing of data as they are entered”, *Examiner asserts that modifying the parameter value associated with a confidence value of a hypothesis of*

*interest updates the confidence value and all references to it.); and altering a display of the confidence value of the hypothesis of interest in real time to match the updated confidence value in response to each modification of the parameter (see §Data Management, “Spreadsheet-like data editing with optional graphing of data as they are entered”, Examiner asserts that the spreadsheet alters a display of the confidence value of the hypothesis of interest in real time (by iteration) to match the updated confidence value in response to each modification of the parameter.).*

It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *HALLoGRAM* and *SYSTAT* to perform decision analysis in addition to exploratory data analysis.

24. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Chryssafidou* in view of *HALLoGRAM*.

Regarding claim 30. *Chryssafidou* teaches

a user interface that graphically displays the plurality of parameters (see p. 10, Fig. 6, Examiner interprets: *claim, argument, support, refute, conjunction, and opposed claims (shown in the screen shot key) to be a plurality of associated parameters of a structured argument.*), comprising respective confidence values for a plurality of hypotheses, at a user accessible display and receives input from a user defining the value of a selected parameter (see p. 10, Fig. 6); and a computational engine that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides

the altered parameters to the user interface, such that the display is updated in real time to reflect the user input (*see Abstract, Examiner interprets DIALECTIC to be the computational engine.*).

*Chryssafidou* does not teach a set of stored executable instructions that can be executed by an associated processor for editing and displaying a structured argument (*see*), having a plurality of associated parameters (*see p. 10, Fig. 6*), the executable instructions comprising: the plurality of hypotheses are displayed as colored nodes within a belief network, and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node.

However, *HALLoGRAM* does teach a set of stored executable instructions that can be executed by an associated processor (*see §PrecisionTree Features, Examiner interprets a “True 32-bit application for Windows 95/NT” to be a set of stored executable instructions that can be executed by an associated processor.*) for editing and displaying a structured argument (*see §Decision Analysis, Examiner interprets “decision trees” and “influence diagrams” to be editable displays of a structured argument.*), having a plurality of associated parameters (*see §Decision Analysis, “Decision trees provide a more formal structure in which decisions and chance events are linked from left to right in the order they would occur. (For example, before you decide where to have a picnic, you need to determine the chance that it will rain.)”, Examiner interprets “Probabilities of events occurring and payoffs for events and decisions added to each node in the tree” to be associated parameters.*), the executable instructions comprising: the plurality of hypotheses are displayed as colored nodes within a belief network, and the respective confidence values being represented as at least one of the brightness, hue, and

saturation of the color of the node (see pp. 1-2, §Decision Analysis, “(For example, before you decide where to have a picnic, you need to determine the chance that it will rain.) The result is a tree structure with the “root” on the left and branches for each chance event or decision extending to the right. Probabilities of events occurring and payoffs for events and decisions are added to each node in the tree.”), *Examiner interprets “that it will rain” to be the hypothesis, node color (see figure) to be a qualitative display, and “payoffs” to be a type of display of confidence value.*). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Chryssafidou* and *HALLoGRAM* to handle alternative decisions, decisions at each stage of some process, and to make the best decisions in a set of alternative decisions.

25. Claims 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Chryssafidou* in view of *Toda et al.* and further in view of *HALLoGRAM*.

Regarding claim 31. *Chryssafidou* teaches a system (see above) for editing and displaying a structured argument, having a plurality of associated parameters (see above), the system comprising:

a user interface that graphically displays the plurality of parameters (see above), comprising a plurality of influence parameters representing the degree of logical relatedness between respective associated first and second hypotheses, at a user accessible display and receives input from a user defining the value of a selected parameter, wherein the influence parameters are displayed as connectors between respective first nodes, representing the

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associated first hypotheses, and respective second nodes, representing the associated second hypotheses (*see p. 10, Fig. 6, Examiner interprets: claim and argument (shown in the screen shot key) to be hypotheses. Examiner interprets: support, refute, conjunction, and opposed claims (show in the screen shot key) to be influence parameters representing the degree of logical relatedness between respective associated first and second hypotheses.*).

*Chryssafidou* does not teach

a processor, operative to execute computer executable instructions; and

a computer readable medium that stores executable instructions, the executable instructions comprising:

a computational engine that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input.

*Toda et al.* do teach

a processor, operative to execute computer executable instructions (*see Fig. 5 and p. 55, “The system has been implemented in Java for the part of the communication control among agents, and in Prolog for the part of the construction of arguments and counterarguments. We have developed a subsystem for the argument-based agent system so that argument processes taken into account issue changes are visualized. In Figure 5, the lower right window displays two*

argument process trees...”, *Examiner asserts the inherency of a processor operative to execute computer executable instructions to generate “two argument process trees” as shown in Fig. 5 by a “system...implemented in Java for...the communication control among agents, and in Prolog for...the construction of arguments and counterarguments”*); and

a computer readable medium that stores executable instructions (*see above, Examiner asserts the inherency of a memory (i.e., a computer readable medium that stores executable instructions) for a processor operative to execute computer executable instructions to generate “two argument process trees” as shown in Fig. 5 by a “system...implemented in Java for...the communication control among agents, and in Prolog for...the construction of arguments and counterarguments”*.), the executable instructions comprising:

a computational engine that alters the selected parameter to the defined value (*see pp. 55-56, “We have developed a subsystem for the argument-based agent system so that argument processes taken into account issue changes are visualized. In Figure 5, the lower right window displays two argument process trees in which the issue and its argument located in the top node of the left tree has changed into the right one, and the upper window displays an argument tree located in a node of argument process tree.”, Examiner interprets the “argument-based agent system” to be a computational engine and “argument processes ... issue changes ... visualized” to be at least one parameter of the structured argument according to a predetermined series of values, representing changes in the at least one parameter over a period of time.*), updates the plurality of parameters according to the defined value of the selected parameter (*see above*), and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input (*see above*). It would have been obvious

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at the time the invention was made to persons having ordinary skill in the art to combine *Chryssafidou* and *Toda et al.* to in order to obtain argumentation that is tolerant of inconsistencies in the world as well as in data and knowledge bases, in contrast to traditional logics.

*Chryssafidou* does not teach the magnitude of a given influence parameter is represented by at least one spatial dimension of the associated connector of the influence parameter. *HALLoGRAM* does teach the magnitude of a given influence parameter is represented by at least one spatial dimension of the associated connector of the influence parameter (*see*, §Enter a Decision Tree Directly In Your Spreadsheet, “For each branch in the tree there is a label, value, and if necessary a probability.”, *Examiner interprets a “branch in the tree” to have a connector (node) and “value” or “probability” to be the magnitude of a given influence parameter in  $R^1$ .*).

It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Chryssafidou* and *HALLoGRAM* to handle alternative decisions, decisions at each stage of some process, and to make the best decisions in a set of alternative decisions.

26. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over *HALLoGRAM*.

Regarding claim 32. *HALLoGRAM* teaches the system of claim 31, the plurality of parameters comprising respective confidence values for a plurality of hypotheses (*see* pp. 1-2, §Overview, “(For example, before you decide where to have a picnic, you need to determine the chance that it will rain.) The result is a tree structure with the “root” on the left and branches for each chance

event or decision extending to the right. Probabilities of events occurring and payoffs for events and decisions are added to each node in the tree.”, *Examiner interprets “that it will rain” to be the hypothesis, node color (see figure) to be a qualitative display, and “payoffs” to be a type of display of confidence value.*).

Regarding claim 33. *HALLoGRAM* teaches the system of claim 32, at least one confidence value being displayed to a user via a first, qualitative indicator and a second, quantitative indicator (see §Decision Analysis, decision tree figures, *Examiner interprets node color to be a qualitative indicator and value or probability to be a quantitative indicator.*).

Regarding claim 34. *HALLoGRAM* teaches the system of claim 32, the plurality of hypotheses being displayed as colored nodes within a belief network (*see* §Decision Analysis, decision tree figures), and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node (*see* §Decision Analysis, decision tree figures).

### Response to Argument(s)

5. As aforementioned, Applicant argues have been fully considered, however, they are not persuasive.

### Examiners Summary

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



7. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### Correspondence Information

8. Any inquires concerning this communication or earlier communications from the examiner should be directed to Michael B. Holmes, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-3686 or facsimile transmission (571) 273-3686 or email [michael.holmesb@uspto.gov](mailto:michael.holmesb@uspto.gov).

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, David Vincent, may be reached at (571) 272-3080.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

Finally, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Moreover, status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) toll-free @ 1-866-217-9197.

***Michael B. Holmes***

Primary Examiner

Artificial Intelligence

Art Unit 2129

United States Department of Commerce

Patent & Trademark Office

*Saturday, February 16, 2008*

*MBH*

*/Michael B. Holmes/*

*Primary Examiner, Art Unit 2129*